Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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6/29/2017

Mr. Robert Wright
Executive Director for Facilities Management
Williams College
54 South Street
Williamstown, MA 01267

**RE: WILLIAMSTOWN**
Transmittal No.: X274097
Application No.: WE-17-003
Class: *SM80-7*
FMF No.: 131193
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Wright:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction, and/or operation of two 2.0 MW electric output , ultra-low sulfur diesel ("ULSD") fired, Reciprocating Internal Combustion Engines at the Williams College Campus located at 54 South Street in Williamstown, Massachusetts ("Facility"). The Application bears the seal and signature of William F. Stengle, Massachusetts Registered Professional Engineer Number 38432.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-O, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

# 1. DESCRIPTION OF FACILITY AND APPLICATION

The Central Heating Plant for the Williams College Campus in Williamstown, Massachusetts provides heating steam and a portion of electrical power used by campus loads. The remaining electrical power used is supplied by utility sources. Williams College currently participates in the ISO-New England Demand Response program by curtailing various campus loads during a Real-Time Demand Response ("RTDR"), Action-2 event.

Williams College utilizes two boilers (Boilers #1 and 3) to provide steam for heating the college campus and running a small steam turbine to generate electricity to offset power supplied by utility sources for campus demand. Williams College has also submitted a notification that it is installing eight, 11.1 million British thermal units per hour ("MMBtu/hr") boilers meeting the requirements of 310 CMR 7.26(30) to 7.26(37) under the Environmental Results Program ("ERP").

Williams College was issued a Restrictive Emissions Status ("RES") on November 3, 1995 (1-R-94-049) that limited the allowable heat input into Boilers #1, 2, and 3 (Boiler #2 has since been removed) and other smaller sources to restrict potential $NO_X$ emissions below 50 tons per year. Boiler #3 was replaced in January 2004 with a new 98 MMBtu/hr Nebraska boiler, also identified as Boiler #3. A Non-major Comprehensive Plan Approval (#1-B-01-026) was issued on January 26, 2004 which superseded the RES and limits the Facility-wide potential emissions to below major source thresholds. The Comprehensive Plan Approval prohibits operation of Boilers 1 and 3 on fuel oil between May 1 and September 30, inclusive.

Williams College plans to install two, 2.0 MWe (electrical output), Caterpillar Model 3516C, Tier 4-certified, compression ignition, Reciprocating Internal Combustion Engines ("RICE") and associated generator sets at the college campus. Each diesel generator will be operated for up to 500 hours per year for non-emergency purposes and unrestricted operating hours for emergency situations. Non-emergency purposes include, but are not limited to: providing electrical power to campus loads when normal (utility) power is not available; reducing utility electrical power usage as a participant in the ISO-New England Demand Response program; performing periodic engine testing and maintenance; and conducting mandatory audits required by ISO-New England.

The proposed diesel generator sets are certified for conformance with the EPA Tier 4 final emission standards per 40 CFR 60, Subpart IIII and 40 CFR 1039. The Model 3516C engines use after treatment emissions controls consisting of a CAT Clean Emissions Module ("CEM") to meet Tier 4 Standards. As Best Available Control Technology ("BACT") for this project, the CAT CEM will be installed as an integral part of the diesel generator package.

The CEM combines a diesel oxidation catalyst ("DOC") for control of Carbon Monoxide ("CO"), Volatile Organic Compounds ("VOC"), and Particulate Matter-soluble organic fraction ("PM"); selective catalytic reduction ("SCR") technology for control of Nitrogen Oxides ($NO_X$); and an ammonia oxidation catalyst ("AMOX") for control of ammonia "slip" in an integrated

module that is designed to work exclusively with the Caterpillar Model 3516C HD generator set. Diesel Exhaust Fluid ("DEF") for the SCR will be stored in a 500-gallon storage tank inside the engine enclosure and transferred to an 18-gallon DEF buffer tank as needed.

The exhaust gases from the engine, at an approximate temperature of 920 degrees Fahrenheit, will pass through the CAT CEM, or equivalent. The mass emission rate limits in this Approval; (4.06 pounds $NO_X$ per hour, 0.81 pounds CO per hour, 0.44 pounds VOC per hour, and 0.20 pounds PM, $PM_{10}$, $PM_{2.5}$ per hour); are based on the engine manufacturer's maximum expected ("Potential Site Variation") emission rate out of the CEM and pounds per megawatt hour emission limits from the Top Case BACT.

Each of the proposed engine/generator sets (Emission Units EU 20 & EU 21) will be located within an existing concrete containment area east of the college Central Heating Plant on Meacham Street in Williamstown, MA. Each diesel generator will be housed within a Pritchard Brown (or equivalent) weather proof, sound attenuating enclosure and associated tail end control equipment (CAT CEM) will connect to a Miratech (or equivalent) engine exhaust silencer. The outlet of each silencer will connect to a dedicated 20-inch diameter, 10-foot tall exhaust stack approximately 30.7 feet above ground level.

The Permittee conducted background sound level monitoring in February 2017 and established ambient sound levels at locations of interest based on these measurements and MassDEP guidance. The Permittee then calculated or modeled predicted sound impacts from measured ambient sound levels and project sound emissions. Table A summarizes the predicted sound levels at the following locations.

**Table A**

| **Sound Modeling Locations** | Lowest Background Sound Level ($L_{90}$, dBA) | Predicted Maximum Sound Level from Facility (dBA) | Total Predicted sound Level (dBA) | Predicted Sound Level Change (dBA) |
|---|---|---|---|---|
| Location 1 | 46 | N/A | 53 | +7.0 |
| Location 2 | 48 | N/A | 53 | +5.0 |
| Location 3 | 50 | N/A | 53 | +3.0 |
| Location 4 | 44 | N/A | 53 | +9.0 |
| Location 5 | 49 | N/A | 53 | +4.0 |
| Location 6 | 50 | N/A | 53 | +3.0 |

Notes:

Location 1: Community Residences/Offices - South of proposed location
Location 2: Community Residences/Offices - South-west of proposed location
Location 3: Park - South-southeast of proposed location
Location 4: Community Residences/Offices - South-southwest of proposed location

Location 5: College Studio-Art building - North-northeast of proposed location
Location 6: College Dining Hall – North of proposed location

Based on review of the engineering design of the facility including sound mitigation measures and predicted facility sound level impacts, MassDEP has determined that the Project incorporated sound suppression and sound transmission prevention elements that constitute necessary equipment, service and maintenance, and necessary precautions to prevent unnecessary sound emissions, as required by 310 CMR 7.10.

After the approved equipment commences operation, the Permittee shall conduct a sound survey (Table 3, Condition 11). The sound survey shall be performed in accordance with a protocol reviewed and approved by MassDEP.

**Applicable Regulatory Requirements**

**New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS)**

The proposed 2.19 MW (mechanical) Caterpillar Model #3516C diesel engines are subject to the federal NSPS for Stationary Compression Ignition Internal Combustion Engines ("CI ICE"), 40 CFR Part 60, Subpart IIII.

In addition, the two EPA Tier 4-Certified, Caterpillar Model #3516C diesel fired RICEs are subject to the Federal NESHAPs for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63, Subpart ZZZZ located at an area source of hazardous air pollutants ("HAPS"). These engines satisfy the NESHAPs requirements by meeting the applicable requirements in 40 CFR 60, Subpart IIII. There are no other applicable requirements in 40 CFR 63 for these engines in accordance with 40 CFR §63.6590(c)(1).

**Nonattainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD)**
**– 310 CMR 7.00: Appendix A**

Williams College is not a major stationary source as defined in 310 CMR 7.00 Appendix A and 40 CFR 52.21(b), and the maximum potential emissions from each engine will be less than the significant emissions thresholds in these regulations; therefore the proposed engines are not subject to non-attainment NSR or PSD review. Accordingly, the engines are not required to comply with the Lowest Achievable Emission Rate ("LAER") limitations, per 310 CMR7.02(8)(a)1, or obtain emission offsets, per 310 CMR 7.00, Appendix A.

**Best Available Control Technology ("BACT") Analysis**

The Massachusetts Air Regulations require that BACT be applied for any source requiring plan approval under 310 CMR 7.02. In lieu of performing a top-down BACT assessment for

the project for $PM_{10/2.5}$, PM, $SO_2$, $NO_X$, CO, VOC, HAP and total HAPs, a Top Case BACT from the most recently issued Plan Approval is proposed as referenced in 310 CMR 7.02(8)(a)2a. Two recent MassDEP Approvals[1,2] for Caterpillar Model #3516C diesel generator sets were used as the Top Case BACT for this Approval. Per MassDEP recommendations the emissions limits for $NO_X$, CO and PM reflect the "Potential Site Variation" values from the engine manufacturer for 100 percent load.

**National Ambient Air Quality Standards**

The Permittee was required by MassDEP to perform an air dispersion modeling analysis, since the proposed engines stacks are less than the 1.5 times the height of the building height or lower than the height of nearby structures. The air dispersion analysis was performed using the manufacturer's maximum "Potential Site Variation" emission rates from the CAT Performance Data sheets [DM9368] and EPA's AERMOD model in the screening mode (AERSCREEN).

The results of the modeling analysis were reviewed, verified by MassDEP and determined to be accurate and representative of the data parameters used. MassDEP concludes that the results summarized in the AERMOD analysis indicate that all pollutants for all averaging periods modeled demonstrate compliance with National Ambient Air Quality Standards ("NAAQS").

[1] Amended Air Quality Plan Approval for four, 2.495 MW electric (2.705 MW mechanical), Caterpillar Model 3516C diesel generator sets at the Taunton Municipal Lighting Plant (TMLP); Transmittal No. X264034, Application No. SE-15-001, dated December 20, 2016.

[2] Air Quality Plan Approval to modify two, 2.0 MW electric output (19.3 MMBTU/hr heat input), Caterpillar Model 3516C diesel generator sets at the Massachusetts Municipal Wholesale Electric Company (MMWEC) for non-emergency operation; Transmittal No. X268524, Application No. WE-15-019, dated March 24, 2016.

## 2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 is subject to and regulated by this Plan Approval:

**Table 1**

| EU | Description | Design Capacity | Pollution Control Device (PCD) |
|---|---|---|---|
| EU20 | Caterpillar Model# 3516C, Tier 4- Certified<br>ULSD-Fired CI Engine | 19.1 MMBtu/hr heat input<br>2.193 MWh mechanical output (engine)<br>2.00 MW/hr electrical output (generator) | CAT Clean Emissions Module (or Equivalent)<br>Sound Attenuating Enclosure |
| EU21 | Caterpillar Model# 3516C, Tier 4- Certified<br>ULSD-Fired CI Engine | 19.1 MMBtu heat input<br>2.193 MWh mechanical output (engine)<br>2.00 MW/hr electrical output (generator) | CAT Clean Emissions Module (or Equivalent)<br>Sound Attenuating Enclosure |

**Table 1 Key:**

EU = Emission Unit Number
CI = Compression Ignition
# = number
PCD = Pollution Control Device
MMBtu/hr = Million British Thermal Units Per Hour
ULSD = Ultra Low Sulfur Diesel

# 3. APPLICABLE REQUIREMENTS

## A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

**Table 2**

| EU | Operational / Production Limit | Air Contaminant | Emission Limit[1,2] | | |
|---|---|---|---|---|---|
| | | | lbs/MWh | lbs/hr | TPY[4] |
| EU20<br>EU21 | 1. ULSD[3] shall be the only fuel fired.<br>2. ≤ 500 hours simultaneous operation and ≤1,000 hour total operation per consecutive 12-month period for **non-emergency** purposes[6]<br>3. As specified in 40 CFR Part 60.4211(c), each engine must be installed and configured according to the manufacturer's emission related specifications. | $NO_X$ | 1.85 | 4.06 | 1.27[5] |
| | | CO | 0.37 | 0.81 | 0.21 |
| | | VOC | 0.20 | 0.44 | 0.11 |
| | | $PM/PM_{10}/PM_{2.5}$ | 0.09 | 0.20 | 0.038 |
| | | $SO_2$ | 0.013 | 0.03 | 0.007 |
| | | $CO_2$ | 1,650 | 3,618 | 905 |
| | | $NH_3$[7] | 0.13 | 0.28 | 0.07 |
| | | HAP | 0.015 | 0.03 | 0.01 |
| | | Smoke and Opacity | Not to exceed 10% opacity during normal operation. Comply with 310 CMR 7.06(1) (a) and (b) during start-up and shut down. | | |

**Table 2 Notes**

1: The lbs/MWh emission limits are based on the power output (mechanical) of the engine.
2: The lb/MWh and lbs/hr emission limits do not apply during the first 20 minutes after start-up.
3: ULSD shall have a sulfur content that does not exceed 0.0015% by weight.
4: The TPY emission limits are for each engine and apply only for periods of operation for non-emergency purposes.
5: TPY $NO_X$ emission limits include an allowance for up to 35 cold startups for each engine per consecutive twelve month period. This is not a limit on the number of actual startups. Williams College shall track actual total $NO_X$ emissions, including all startup time against the combined limit 2.54 tons per consecutive 12 month period for both engines.
6: The Permittee has submitted Air Quality Dispersion modeling reflecting the operation of each engine concurrently and individually. The < 500 hour engine operational limit applies to simultaneous operation of both engines; a single engine may be operated for more than 500 hours provided that the total run hours for both engines does not exceed 1,000 hours in any 12-month period for non-emergency purposes. Hours of operation shall be tracked to the nearest 0.1 hours based on actual operating time. The operating hour restrictions do not apply to engine operations for actual emergencies as defined in 310 CMR 7.26(41).
7: Ammonia emission rate is 15ppm @15%$O_2$ based on EPA Guidance for a Tier 4 engine utilizing SCR $NO_X$ controls.

**Table 2 Key:**

EU = Emission Unit
CFR = Code of Federal Regulations
CMR = Code of Massachusetts Regulations
CO = Carbon Monoxide
lbs/MWh = pounds per Megawatt-hour
$NH_3$ = Ammonia
$NO_x$ = Nitrogen Oxides
PM = Total Particulate Matter
$PM_{10}$ = Particulate Matter less than or equal to 10 microns in diameter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
$CO_2$ = Carbon Dioxide
HAP = Hazardous Air Pollutant(s), as listed in the 1990 Clean Air Act (CAA) Amendments, Section 112(b).
lbs/hr = pounds per hour
$SO_2$ = Sulfur Dioxide
VOC = Volatile Organic Compound(s)
TPY = tons per consecutive 12-month period
ULSD = Ultra Low Sulfur Diesel
≤ = less than or equal to
% = percent

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

**Table 3**

| EU | Monitoring and Testing Requirements |
|---|---|
| EU20<br>EU21 | 1. The Permittee shall install and operate, on each engine, a non-resettable hour meter to monitor run hours for each month and each consecutive twelve-month period. |
| | 2. The Permittee shall monitor fuel use in each engine for each month and each consecutive twelve-month period. |
| | 3. The Permittee shall monitor the power output in megawatt-hours (electrical) of each emission unit for each run hour. |
| | 4. The Permittee shall ensure that each engine stack is constructed so as to accommodate the emissions testing requirements as noted above and as stipulated in 40 CFR Part 60, Appendix A. The stack sampling ports shall comply with 40 CFR Part 60. The sampling ports shall be 90 degrees apart from each other. |
| | 5. The Permittee shall perform inspections of the subject engines and control equipment as recommended by the manufacturer. |
| | 6. The Permittee shall monitor fuel oil purchases such that only fuel oil containing asulfur content no greater than 0.0015 percent by weight is purchased for use in each unit. |
| | 7. The Permittee shall monitor sulfur content of each new shipment of fuel oil received. Sulfur content of the fuel can be demonstrated through fuel analysis by the Permittee or by the fuel Transporter or Supplier or by a certification from the fuel Supplier. The analysis of sulfur content of the fuel shall be in accordance with the applicable American Society for Testing Materials (ASTM) test methods or any other method approved by the MassDEP and EPA. Fuel sulfur information may be provided by fuel suppliers. |
| | 8. The Permittee shall test the SCR catalyst periodically, as specified by the manufacturer's recommendation, in order to ensure proper operation of the SCR control system. |
| Facility-wide | 9. The Permittee shall monitor engine operating hours (i.e. date, EU operated, time run) to demonstrate compliance with the operating hour restrictions in Table 2. |
| | 10. The Permittee shall conduct a sound survey during daytime and nighttime operations in accordance with a MassDEP-approved protocol. The survey shall be conducted within 120 days of the commencement of operation of the Facility. |
| | 11. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration. |
| | 12. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13. |
| | 13. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol. |

| Table 3 | |
|---|---|
| **EU** | **Monitoring and Testing Requirements** |
| Facility-wide | 14. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report. |

**Table 3 Key:**

BAW = Bureau of Air and Waste
CFR = Code of Federal Regulations
CMR = Code of Massachusetts Regulations
CO = Carbon Monoxide
EU = Emission Unit Number
$NO_x$ = Nitrogen Oxides
USEPA = United States Environmental Protection Agency
WERO = Western Regional Office
$\leq$ = less than or equal to
% = percent

| Table 4 | |
|---|---|
| **EU** | **Record Keeping Requirements** |
| EU20<br>EU21 | 1. The Permittee shall maintain a copy of the USEPA Certificate of Conformity with the NSPS and manufacturer's requirements for Tier 4 certification and the unit-Specific Operation and Maintenance Procedures ("SOMP") for the engines. |
| | 2. The Permittee shall, for each engine, maintain a record to document monthly and consecutive twelve-month period hours of operation and the reason (emergency or non-emergency) for each period of operation. |
| | 3. The Permittee shall for each engine, maintain a record of the fuel consumed for each month and consecutive twelve-month period. |
| | 4. The Permittee shall maintain records of fuel purchases and oil analysis results or fuel supplier certifications used to demonstrate compliance with fuel oil sulfur content requirements. |
| Facility-wide | 5. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the calculated actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping. |
| | 6. The Permittee shall maintain records of monitoring and testing as required by Table 3. |
| | 7. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site. |
| | 8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed. |

| Table 4 | |
|---|---|
| **EU** | **Record Keeping Requirements** |
| Facility-wide | 9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation. |
| | 10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration. |
| | 11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years. |
| | 12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request. |

**Table 4 Key:**

BAW = Bureau of Air and Waste
EU = Emission Unit Number
PCD = Pollution Control Device
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency

## Table 5

| EU | Reporting Requirements |
|---|---|
| EU20<br>EU21 | 1. The Permittee shall notify MassDEP WERO (attn.: AQ Permit Chief), in writing, within 14 days of commencement of operation of the approved EUs. |
| | 2. The Permittee shall submit the Final Standard Operating and Maintenance Procedures (SOMP) for the approved EUs to MassDEP WERO BAW (attn.: AQ Permit Chief) within 60 days of commencement of operation of the approved EUs. Any subsequent changes to the SOMP shall be submitted to MassDEP WERO BAW (attn..: AQ Permit Chief), within 15 days of said revision(s). |
| Facility-wide | 3. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP's request. |
| | 4. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c). |
| | 5. The Permittee shall notify the Western Regional Office of MassDEP, BAW Permit Chief by telephone: 413-755-2115, email: marc.simpson@massmail.state.ma.us, or fax : 413-784-1149, as soon as possible, but no later than three (3) business days after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to the Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s). |
| | 6. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes which did not require Plan Approval, but are required under 310 CMR 7.02(2)(e), 7.03(5), 7.26 (etc.) to be reported with the Source Registration. |

**Table 5 Key:**

EU = Emission Unit Number
AQ = Air Quality
BAW = Bureau of Air and Waste
CMR = Code of Massachusetts Regulations
WERO = Western Regional Office

# 4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

**Table 6**

| EU | Special Terms and Conditions |
|---|---|
| EU20<br>EU21 | 1. Emissions performance testing of certified engines, per 40 CFR 60.8, is not required as long as the engine and emission controls are installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions. Otherwise, testing is required as specified in 40 CFR §60.4211(g)(3). |
| | 2. The owner & operator must not[1] modify or defeat any emission controls or remove emissions-related labeling, except as allowed by applicable regulations[2] and the manufacturer's instructions. |
| | 3. Each engine shall be equipped with a Closed Crankcase Ventilation System ("CCV")[3] that filters oil vapors from the crankcase vent and returns them to the oil sump. The filtered crankcase vapors shall be routed to the engine intake. |
| | 4. SCR grade Diesel Emission Fluid ("DEF") shall be a 32.5% aqueous solution of urea meeting the quality requirements of ISO 22241-1. |
| | 5. The Permittee has indicated that the proposed Reciprocating Internal Combustion Engine are subject to 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines . Since MassDEP has not accepted delegation for Subparts IIII or ZZZZ, you are advised to consult with the United States Environmental Protection Agency (USEPA) for additional information regarding applicable requirements that may apply to your facility. EPA's address is: US EPA Region 1, 5 Post Office Square – Suite 100, Boston, MA 02109-3912, attn..: Susan Lancey |
| Facility-wide | 6. The Permittee shall use the following noise mitigation measures in constructing the Facility:<br>a. Miratech Silencer, or equivalent, on the discharge of each diesel engine exhaust after the CAT CEM<br>b. Each diesel generator will be housed in a weather proof, sound attenuating Pritchard-Brown, or equivalent, enclosure as described in the Application. |
| | 7. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval. |

**Table 6 Notes**

1: Per 40 CFR 60.4211(a), 40 CFR 1039.115, and 40 CFR 1068.101(b).
2: Approved auxiliary-emission control devices (AECD), per 40 CFR 1039.115(g) and 1039.665, may be used to allow limited operation of the engine with a fault condition (i.e. low DEF level) in emergency situations. The Tier 4 emission standards do not apply in these situations. Owners and operators must report the activation of an approved AECD to the engine manufacturer within 60 days.
3. The Tier 4 regulation does not require closed crankcase ventilation in non-road engines. However, in engines with open crankcases, crankcase emissions must be measured and added to exhaust emissions in assessing compliance.

**Table 6 Key:**

AQ = Air Quality
BAW = Bureau of Air and waste
SCR = Selective Catalytic Reduction
dB(A) = Decibels measured using A-weighted system

CMR = Code of Massachusetts Regulations
EU = Emission Unit Number
ISO = International Organization for Standardization
% = Percent
USEPA = United States Environmental Protection Agency

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as "shanty caps" and "egg beaters."

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

**Table 7[(1)]**

| EU | Stack Height Above Ground *(feet)* | Stack Inside Exit Dimensions *(feet)* | Stack Gas Exit Velocity Range *(feet per second)* | Stack Gas Exit Temperature Range *($^oF$)* |
|---|---|---|---|---|
| EU20 | 30.7 | 1.67 | 74 - 121 | 795 - 880 |
| EU21 | 30.7 | 1.67 | 74 - 121 | 795 - 880 |

**Table 7 Notes**

1: The stack gas exit velocity and temperature ranges are based on operating conditions. These are not monitored parameters.

**Table 7 Key:**

EU = Emission Unit Number
$^oF$ = Degree Fahrenheit

## 5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions

contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## 6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## 7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Todd Wheeler by telephone at (413) 755-2297 or in writing at the letterhead address.



Marc Simpson
Air Permit Section Chief
Bureau of Air and Waste

Enclosure

cc: WERO AQ Plan File
WERO AQ Approvals File

ecc: MassDEP/Boston - Yi Tian
Maura Hawkins – Berkshire Environmental Consultants